

Fig. 1.

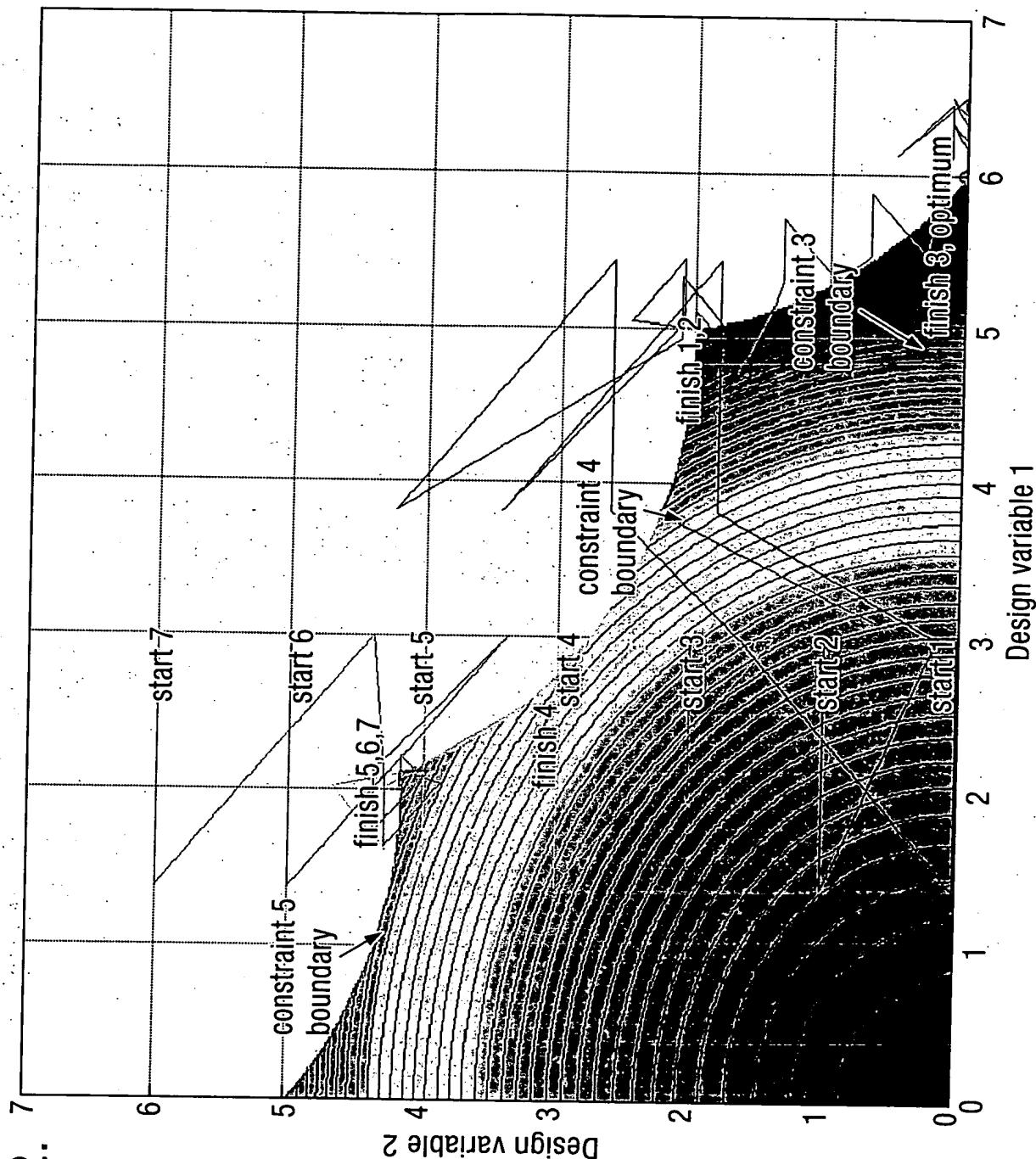
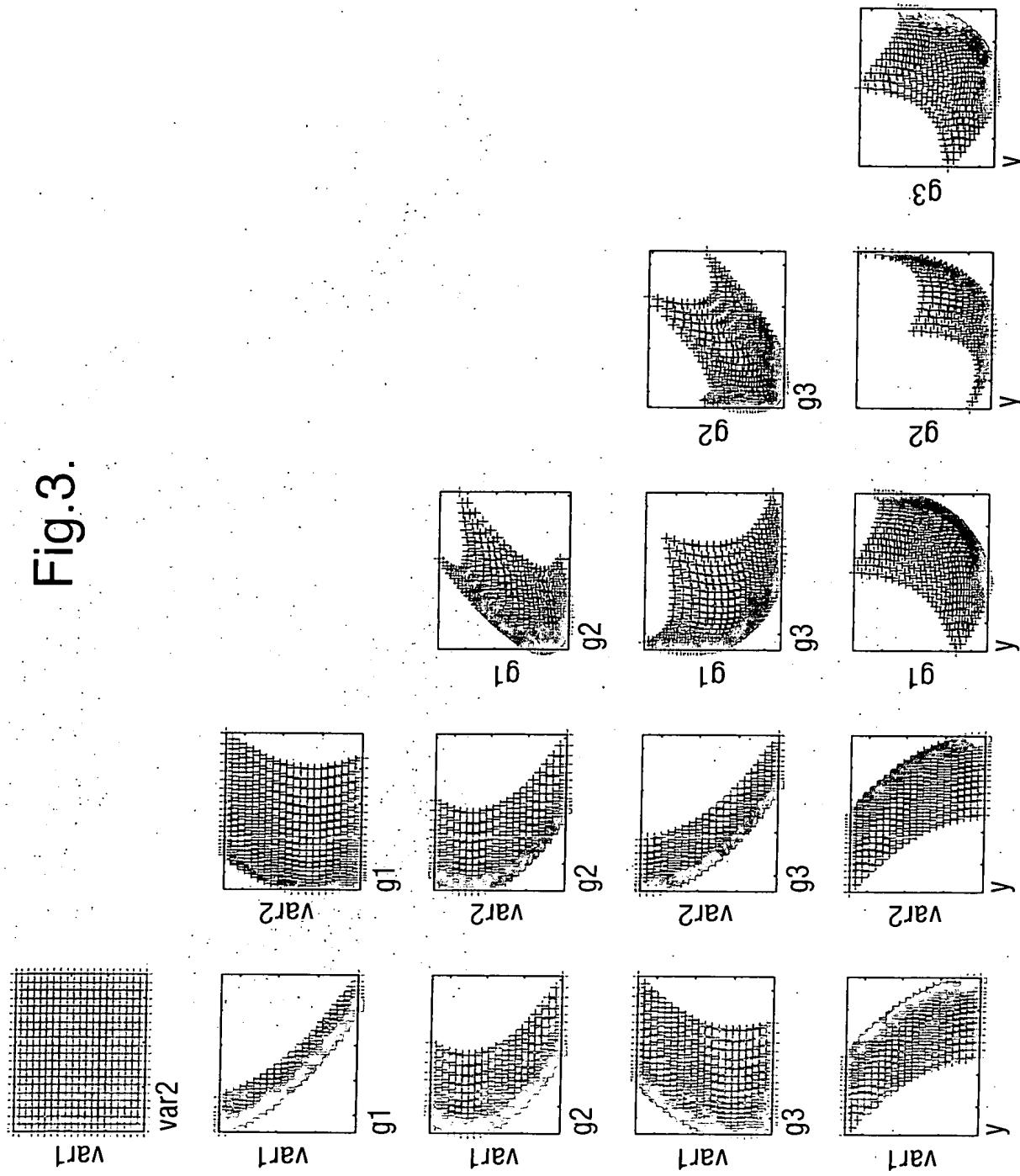


Fig.2.

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Fig. 3.



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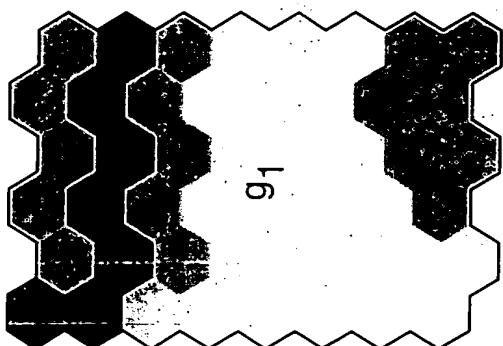
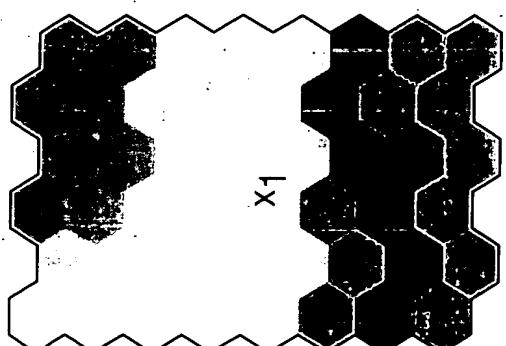
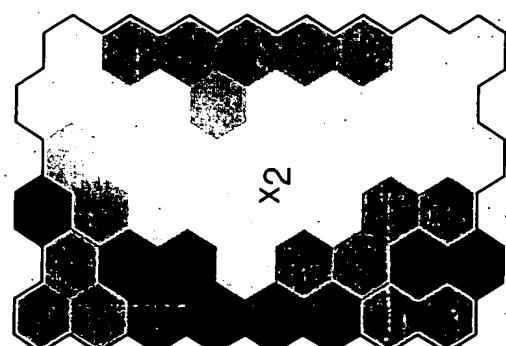


Fig.4.

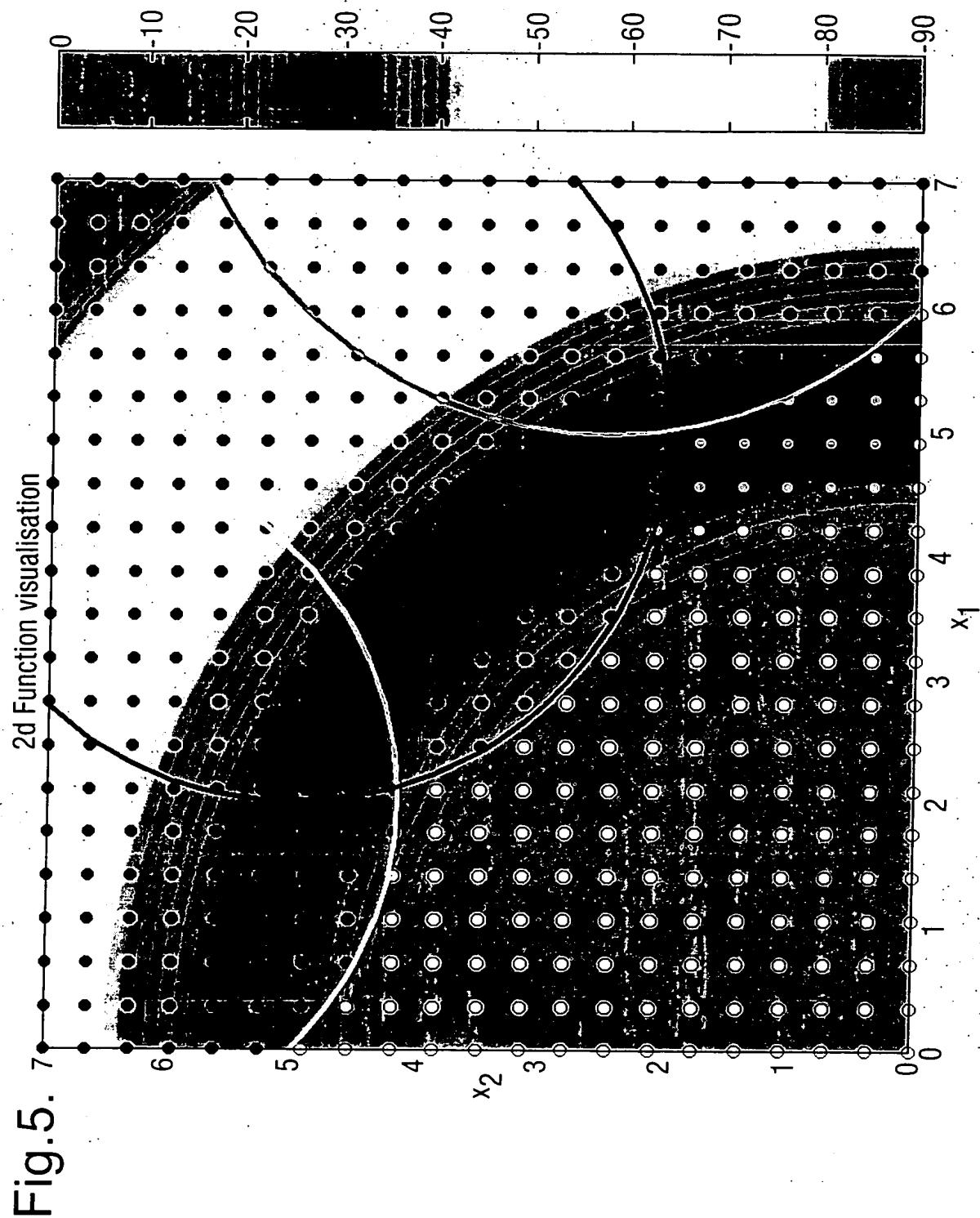


Fig.5.

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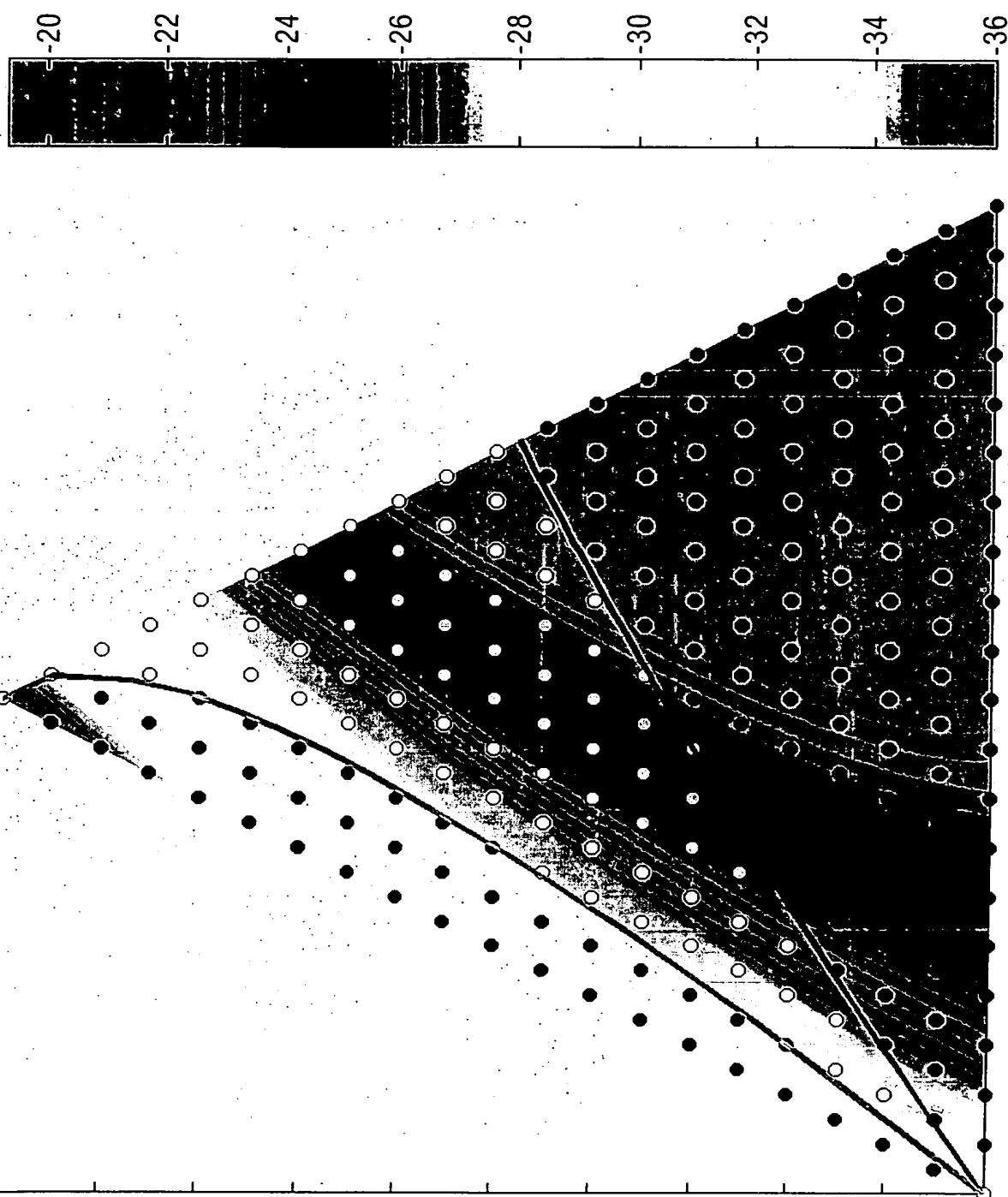


Fig.6.

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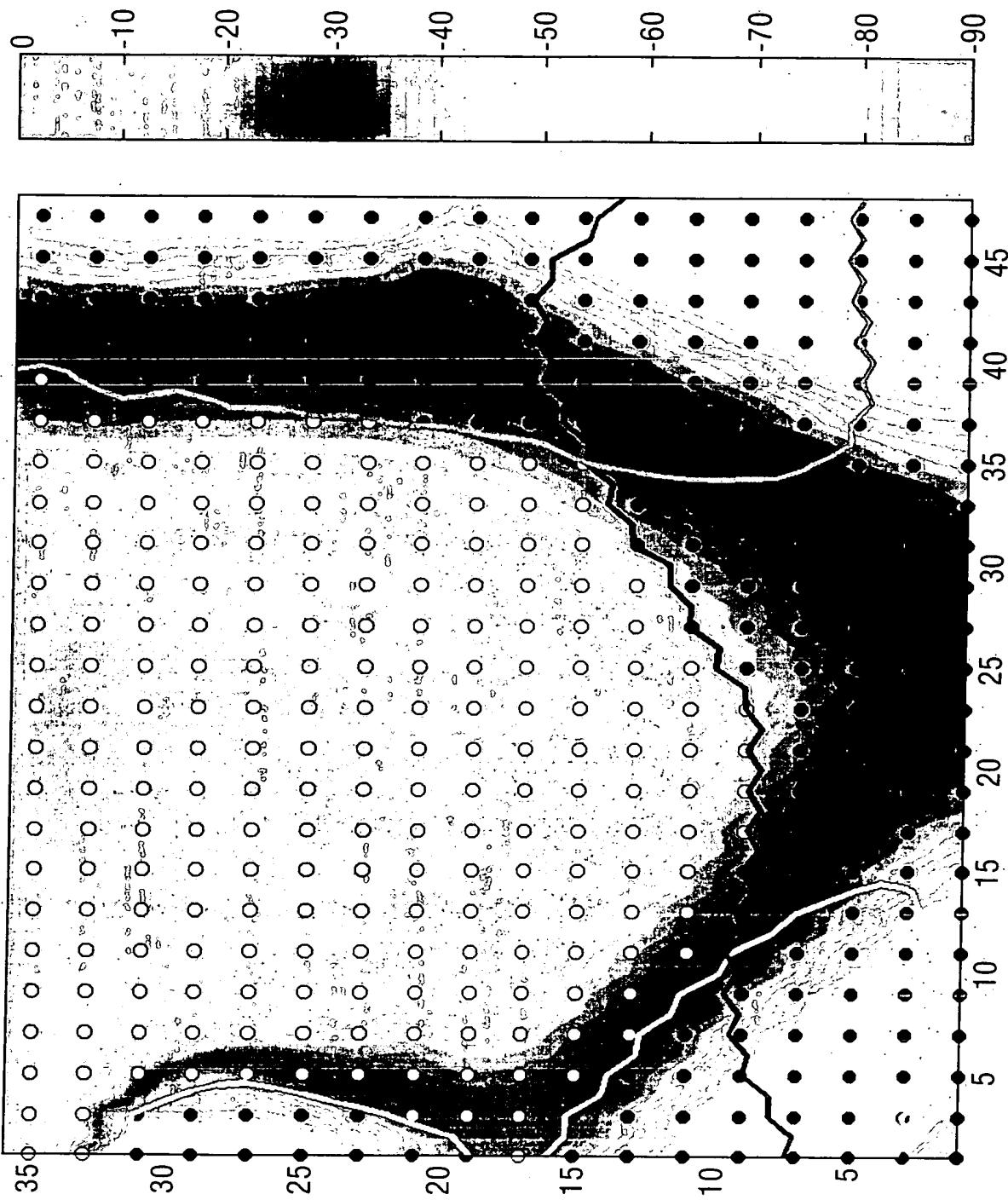
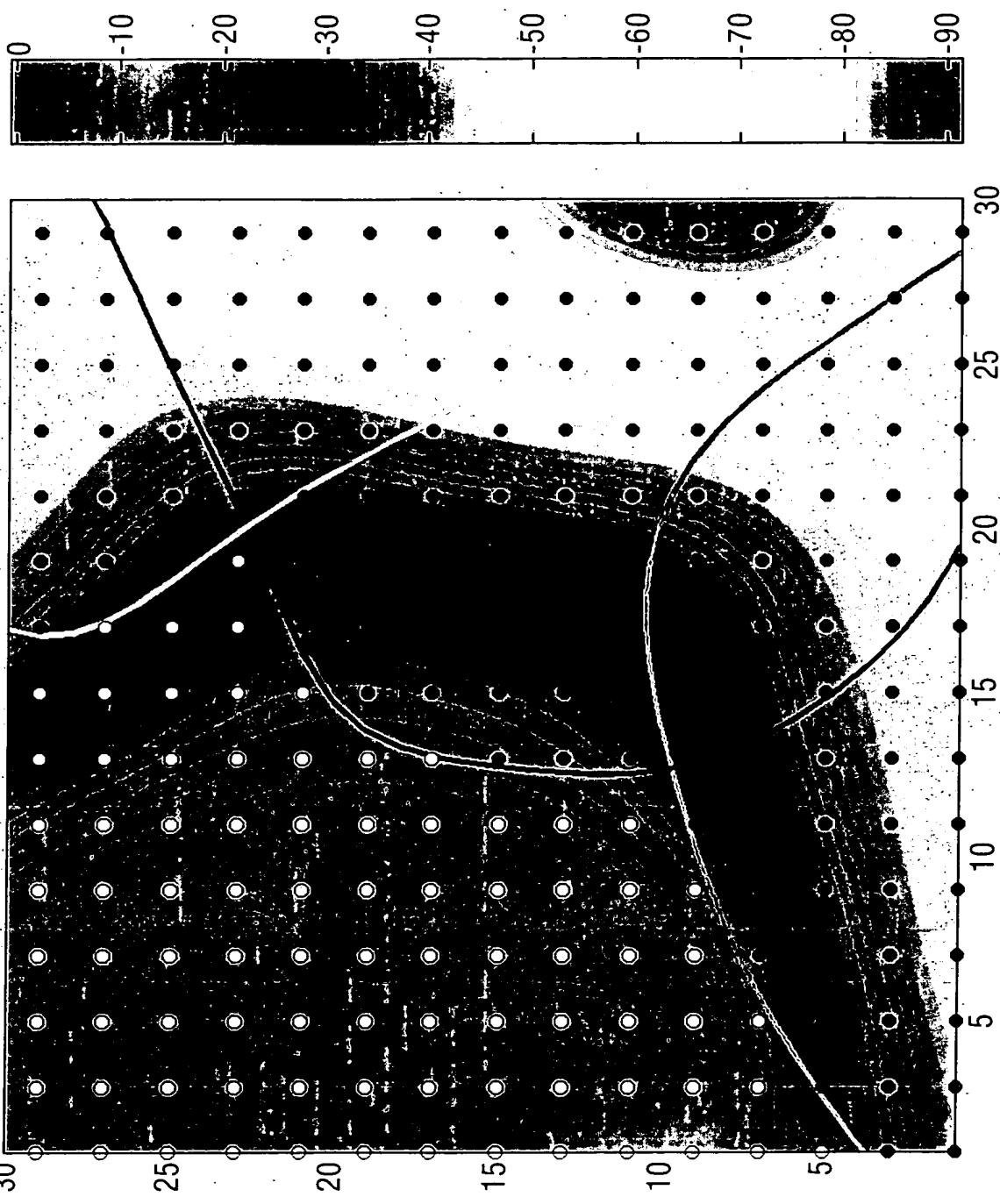


Fig. 7.

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Fig. 8. Variable 3. White circles in feasible region



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50 x 50 array of values of  $C_D$  at  $C_L=0.71$  and  $M=0.74$ .

Fig.9.

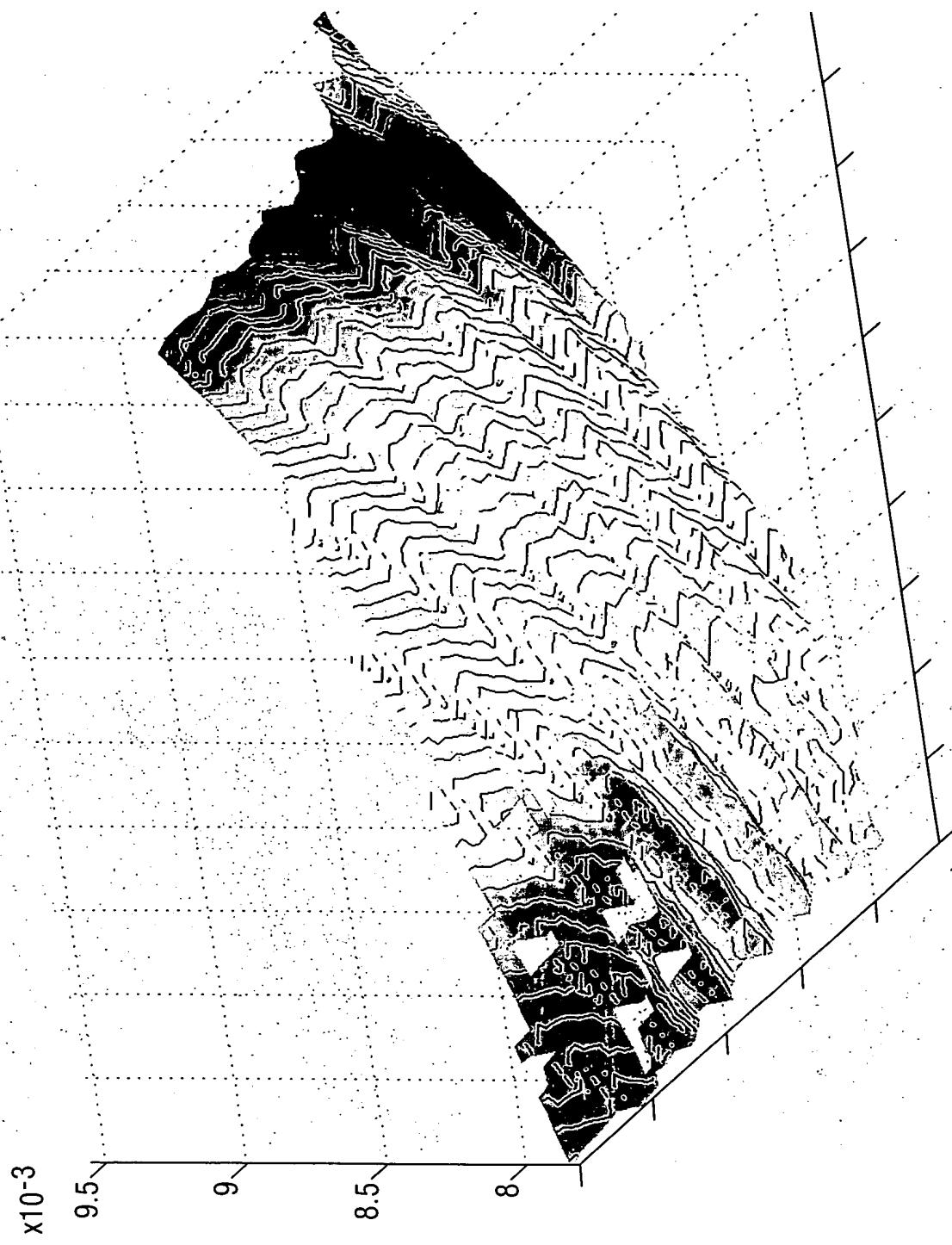
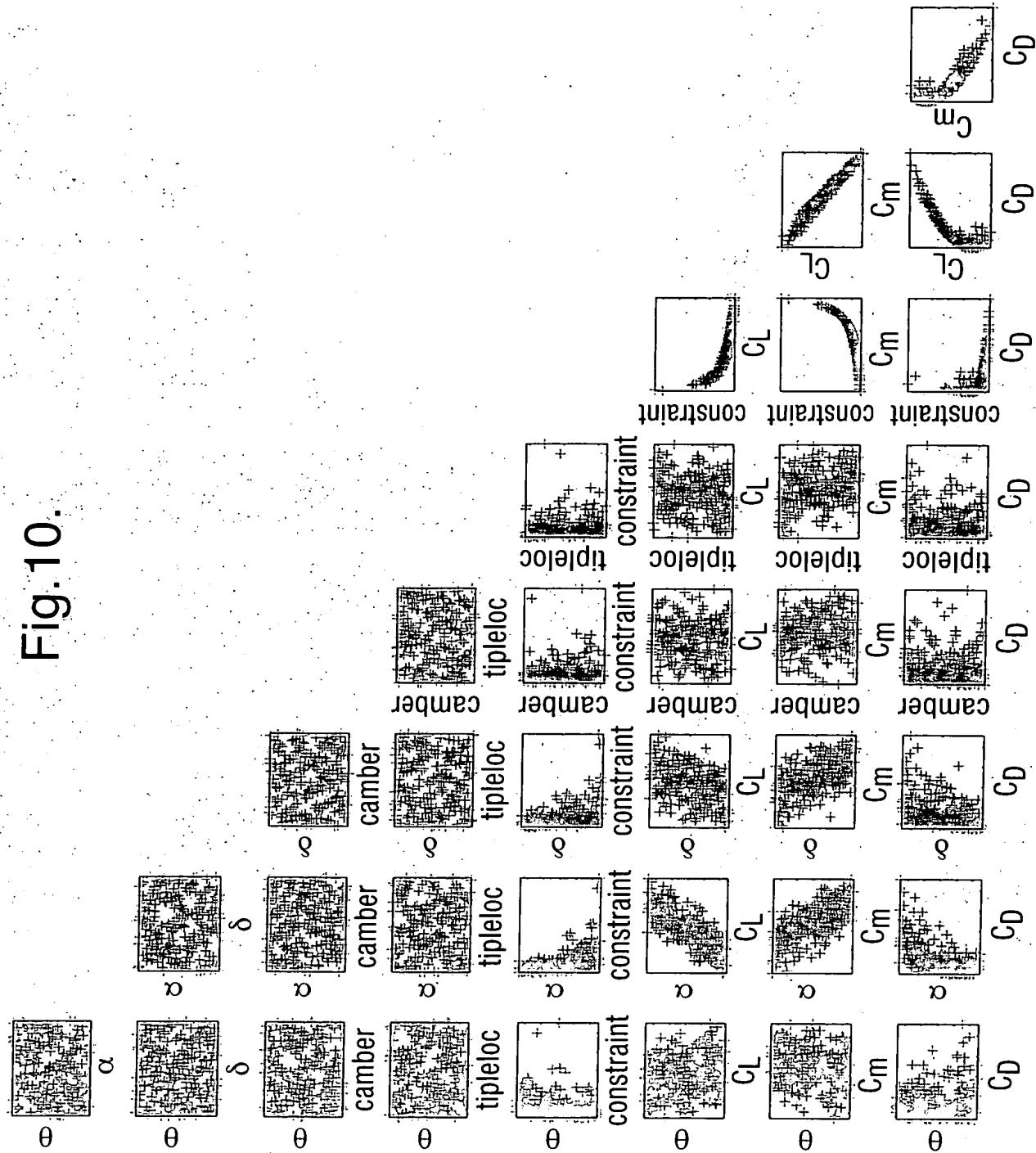


Fig. 10.



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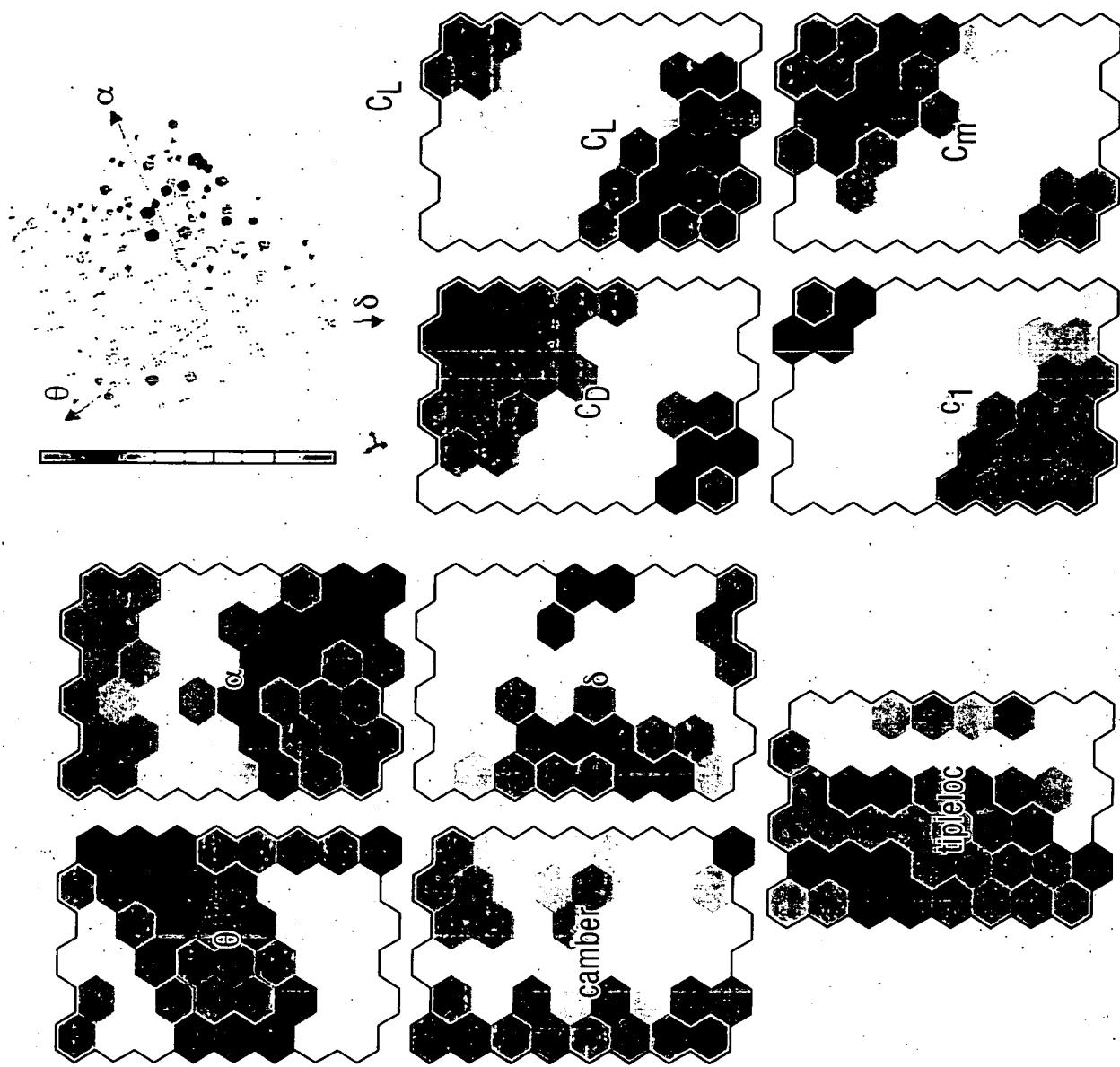
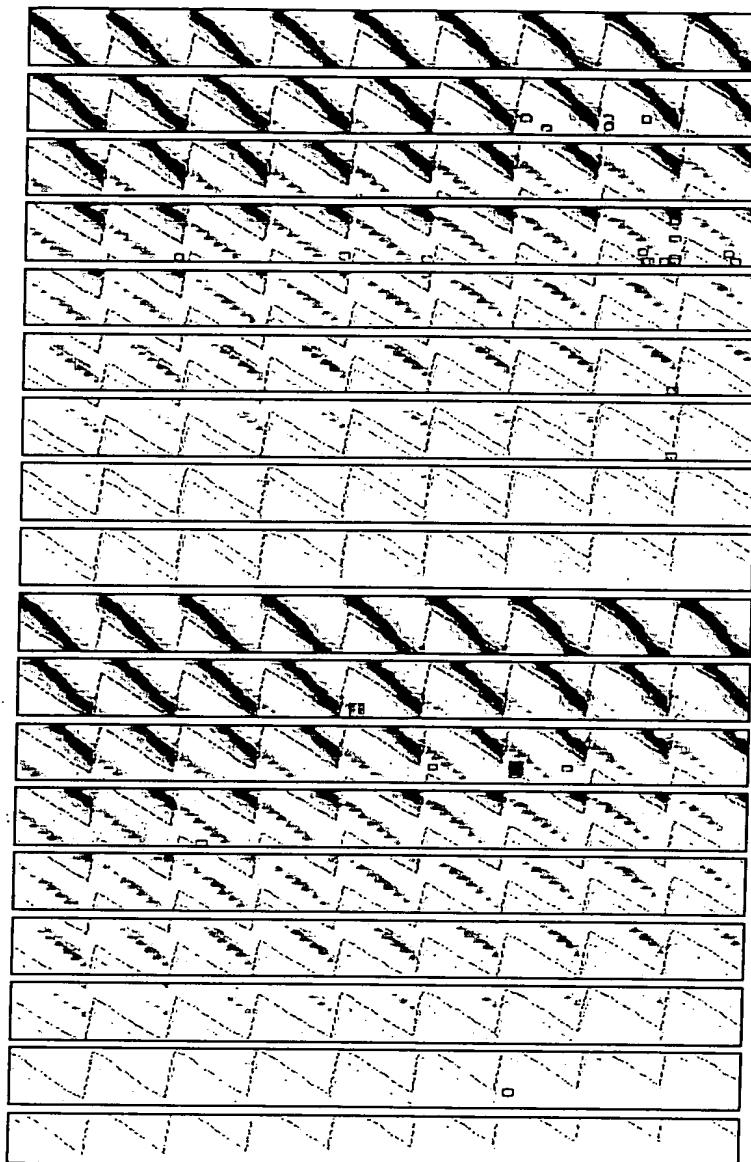
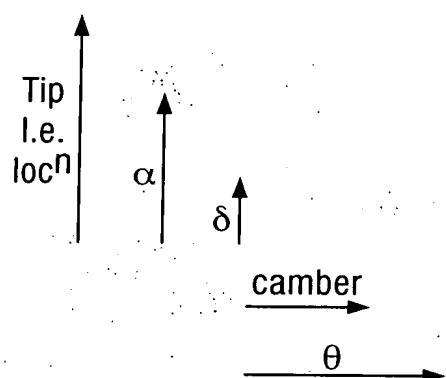


Fig. 11.

Fig.12.



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Fig. 13. Variable 10. White circles in feasible region.

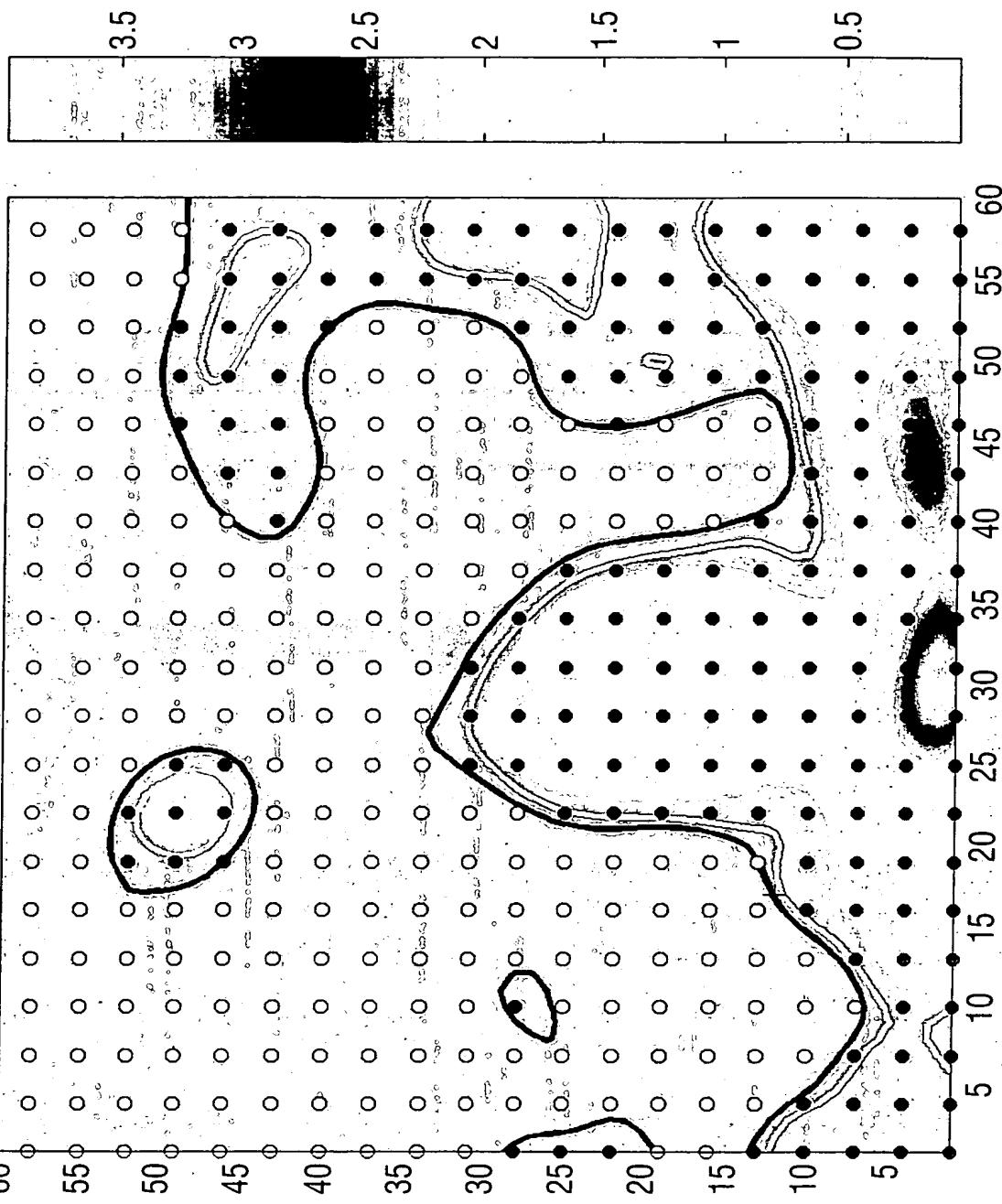


Fig. 14.

Comparison between actual and elliptic loading

—x— Elliptic  
—□— Krig  
—+— GTM

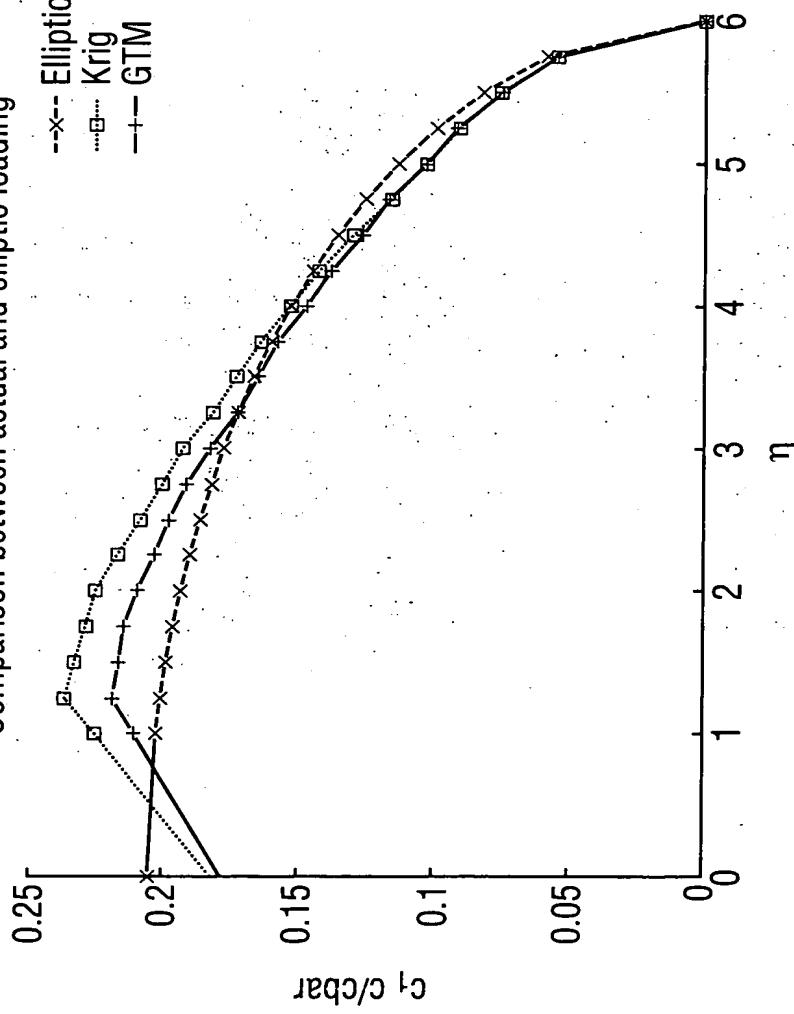
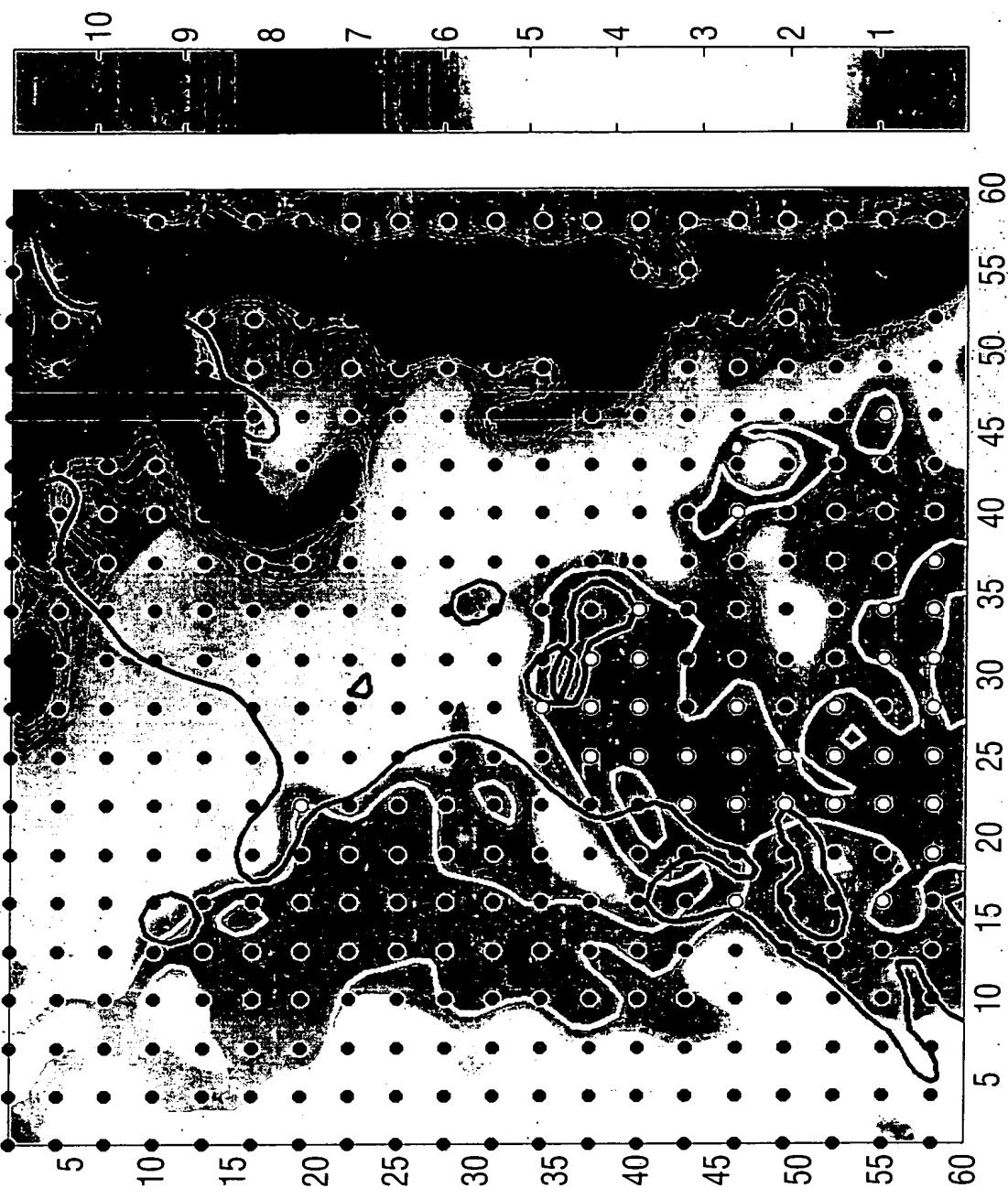


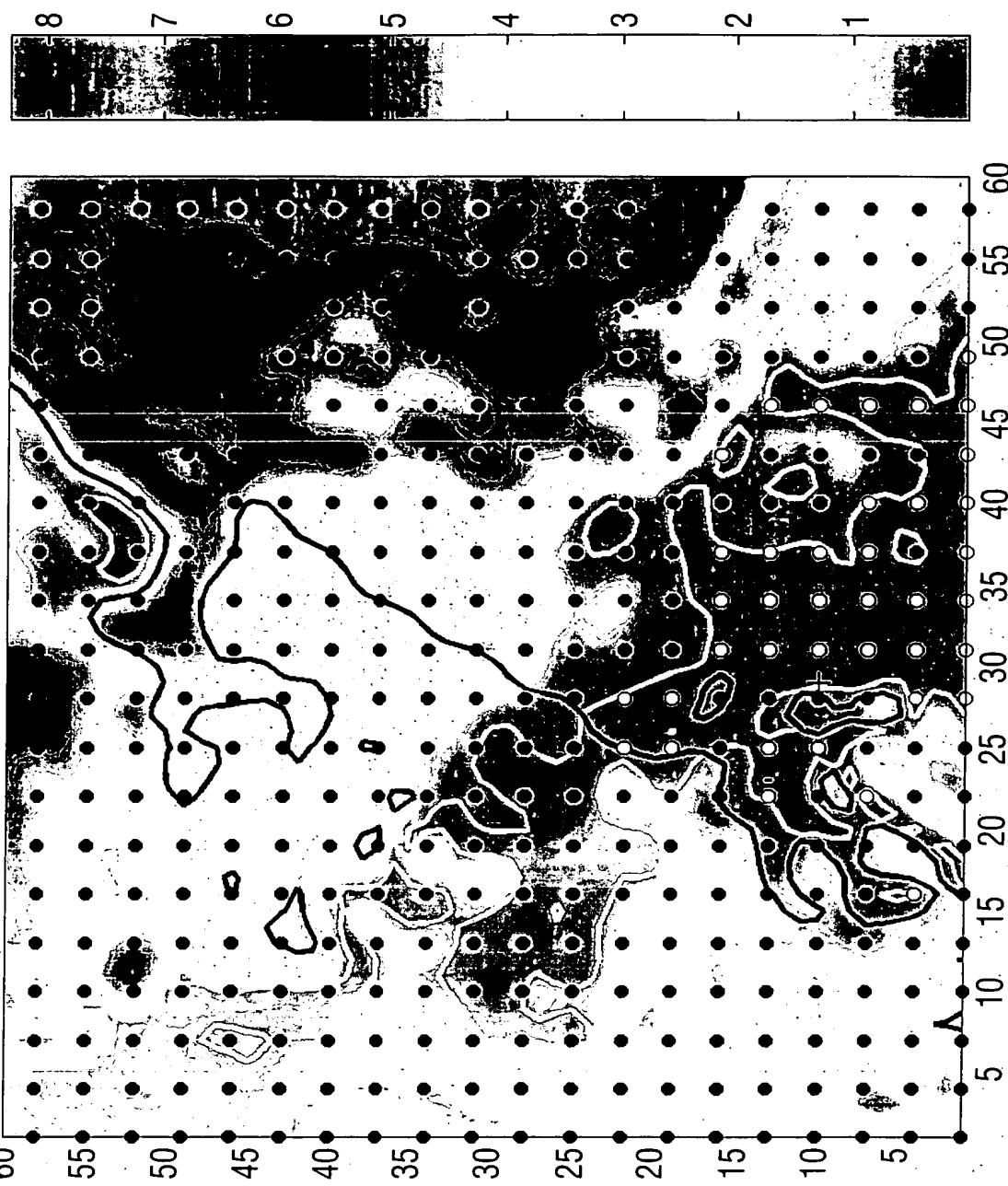
Fig.15. Penalty function. White circles in feasible region.



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Fig. 16. Penalty function. White circles in feasible region.



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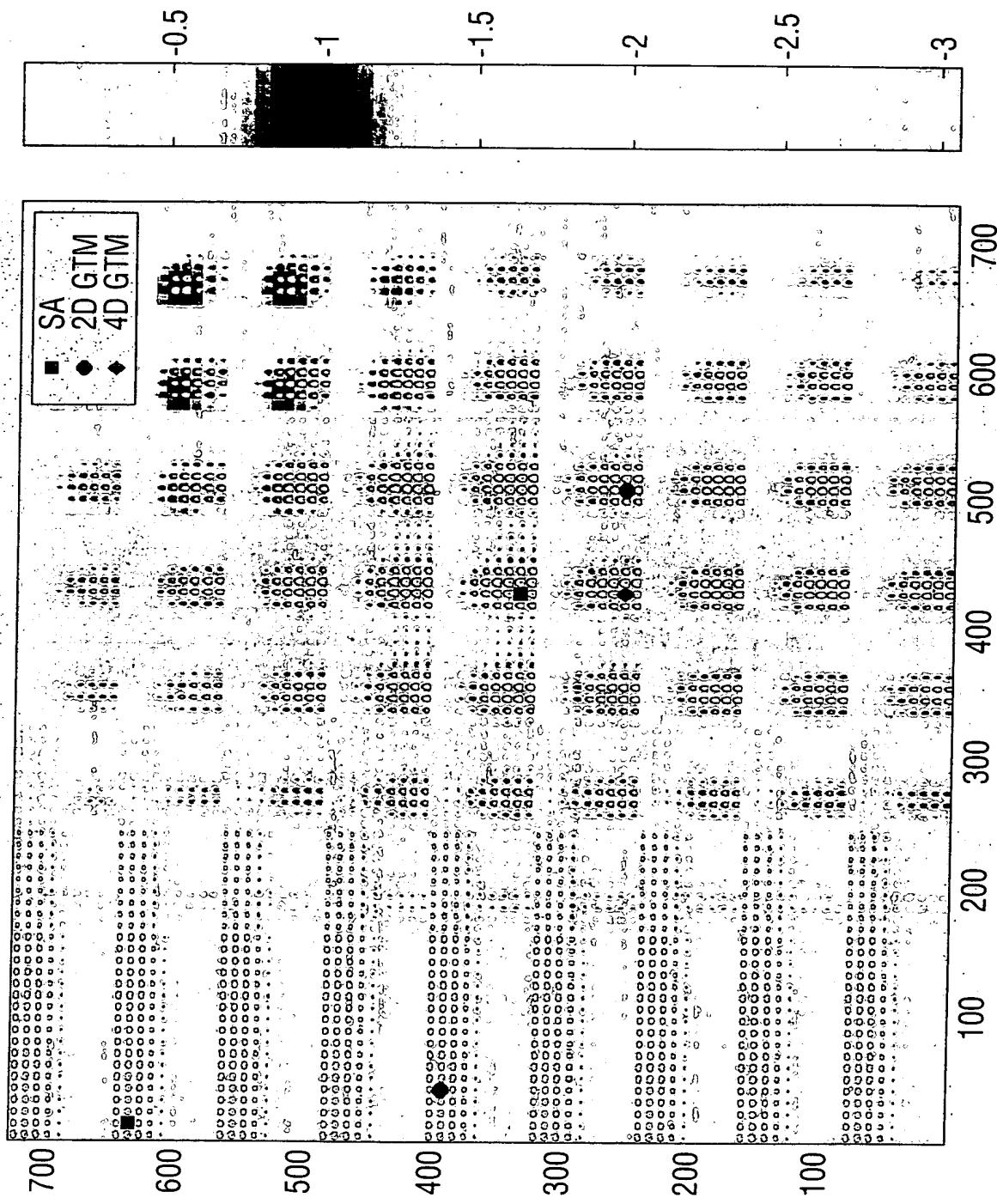


Fig. 17. 700

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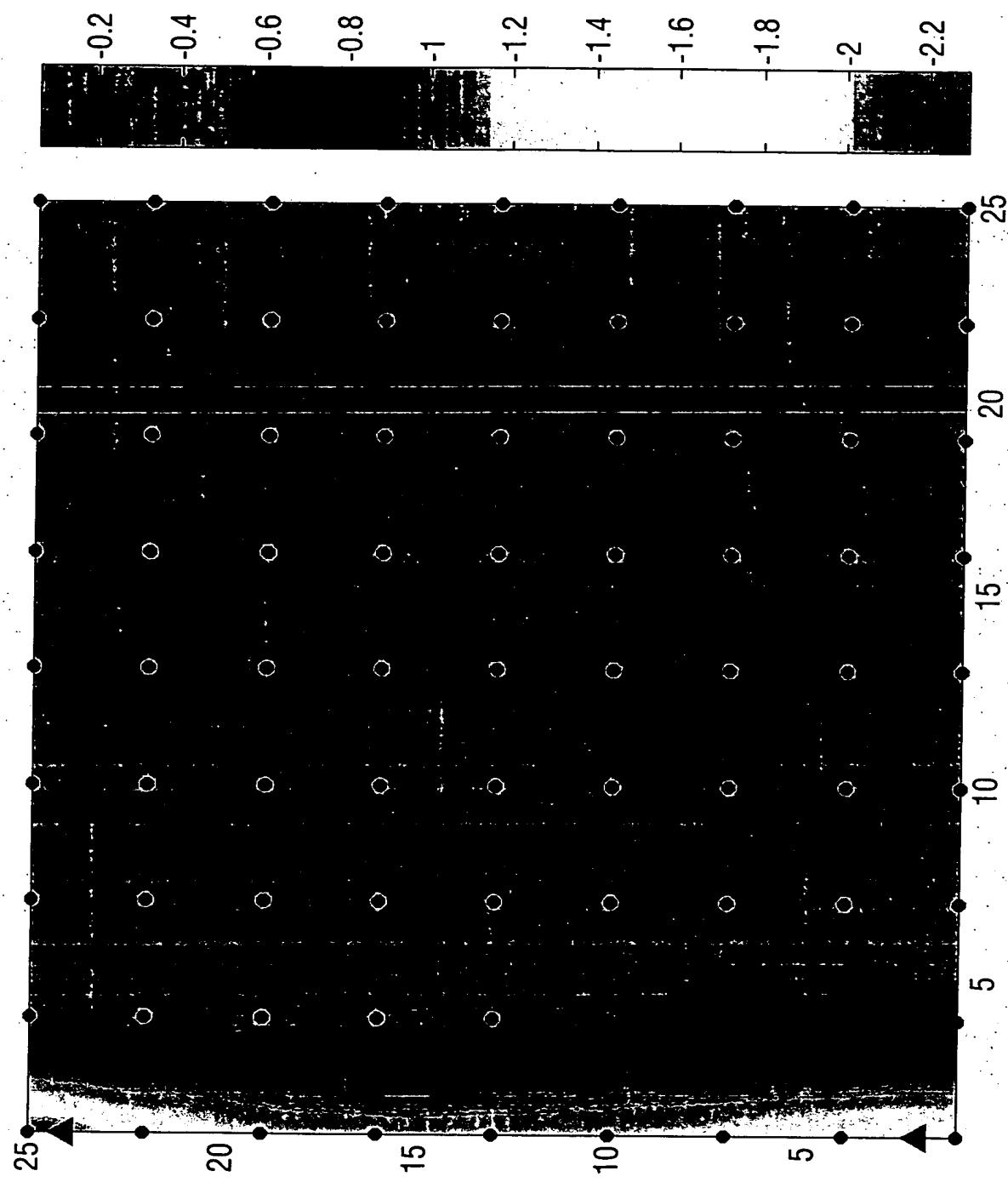
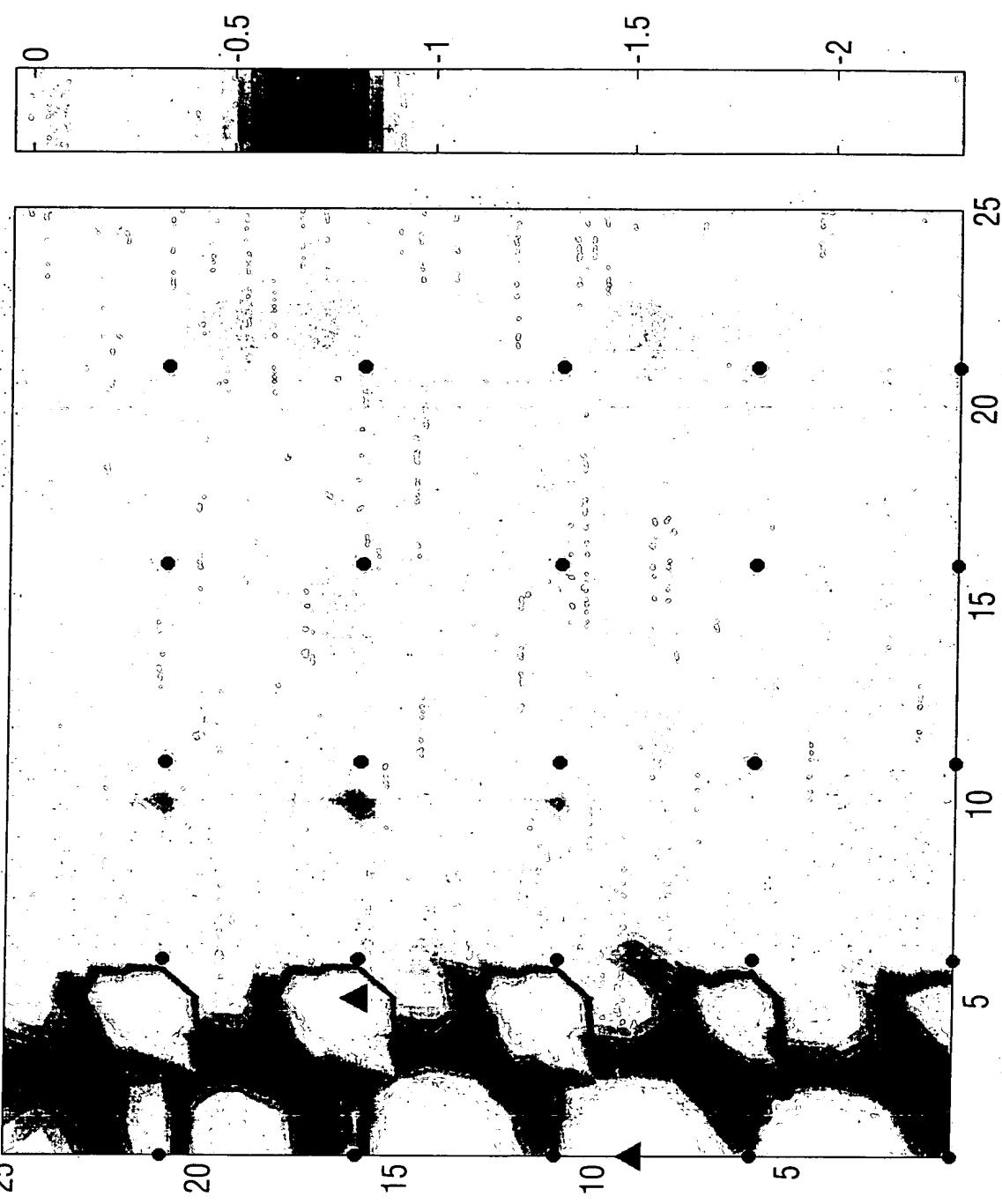


Fig. 18.

Fig. 19. Hartmann function



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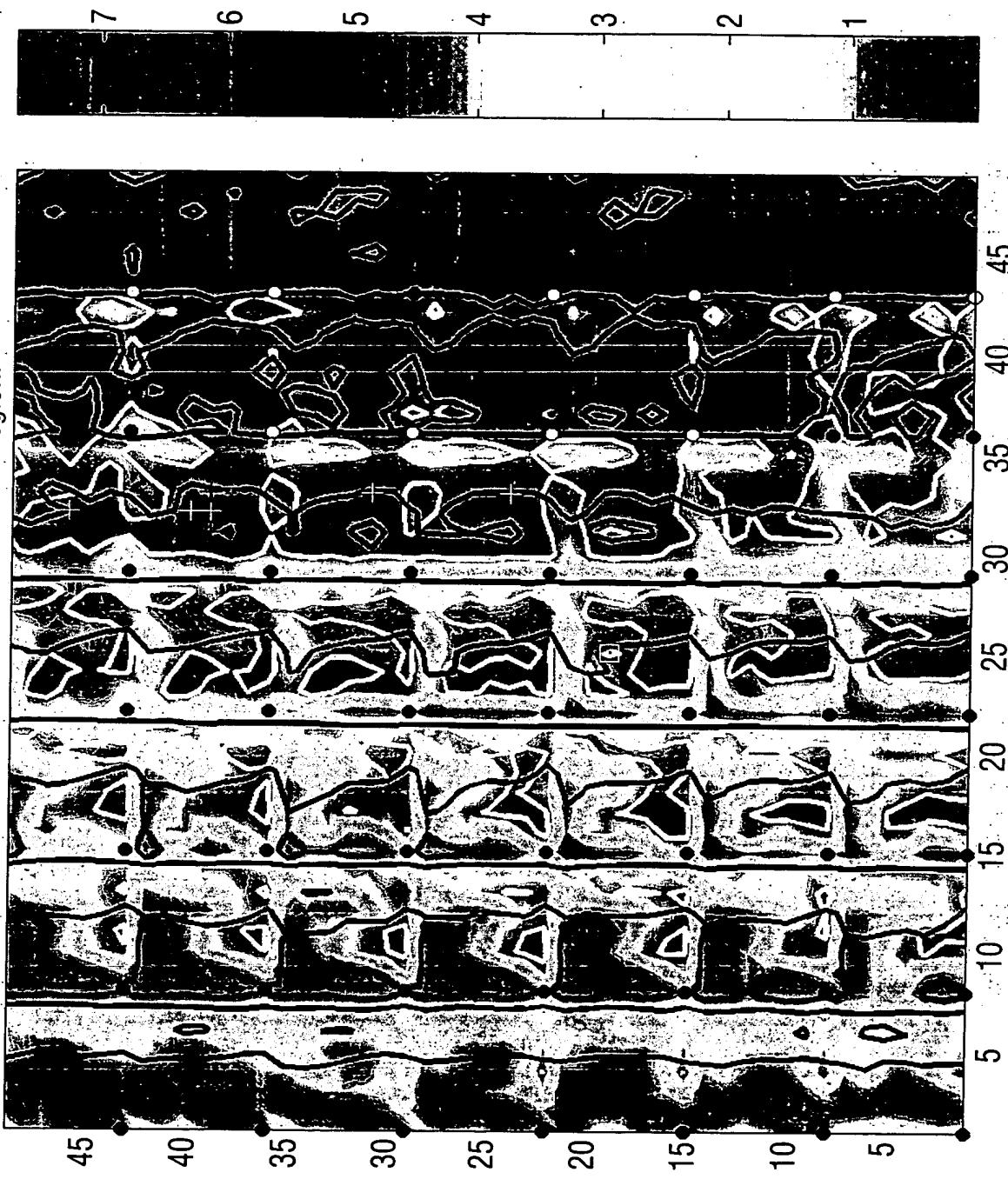
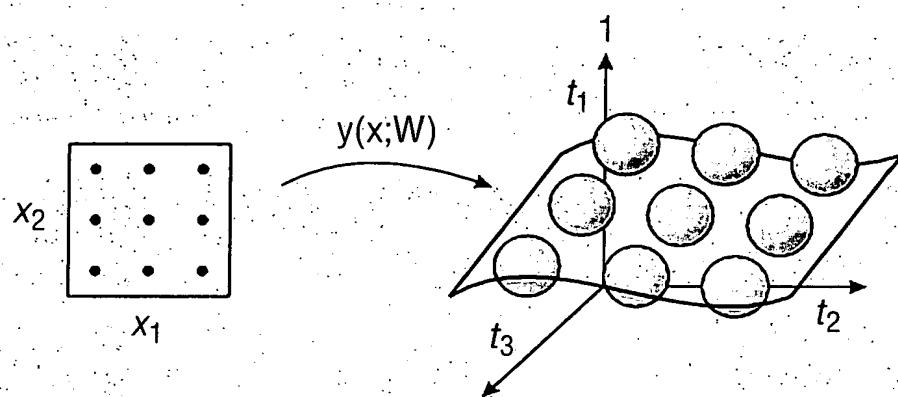


Fig. 20.

Fig.21.



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TABLE 1

Method	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$c_1$	$c_L$	$c_D$
Simulated annealing on response surfaces	3.583	5.1936	1.1835	0.0156	10.2366	1.0000	0.1993	68.07e-04
Additional CFD evaluation	3.583	5.1936	1.1835	0.0156	10.2366	1.0004	0.2035	86.31e-04

TABLE 2

Method	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	trim	$c_L$	$c_D$
5D GTM	2.7877	4.0083	0.5342	0.0506	10.1614	0.9803	0.1966	0.0064
Additional CFD evaluation	2.7877	4.0083	0.5342	0.0506	10.1614	0.9920	0.1934	0.0054

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